

F. L. Knopf
713 Boulder Circle
Fort Collins, CO 80524

<flknopf@yahoo.com>
970 482-1116

Populations and Politics of a Plover

Fritz L. Knopf

Senior Scientist, Retired
US Department of Interior
713 Boulder Circle
Fort Collins, CO 80524

Victoria J. Dreitz

Avian Researcher
Colorado Division of Wildlife
317 West Prospect
Fort Collins, CO 80526

The Mountain Plover (*Charadrius montanus*) is a species that inhabits cold, xeric-shrub landscapes of the western United States where it breeds in low-density, scattered populations primarily in Colorado, New Mexico, and Wyoming. To the east of this landscape, the plover is found most predictably on prairie-dog (*Cynomys* spp.) towns within western prairies from northern Montana into Nuevo Leon and San Luis Potosi. These landscapes also historically supported large herds of bison (*Bison bison*). With near eradication of bison and decreased prairie-dog presence on the landscape, the eastern breeding range of this plover became fragmented and generally of poorer quality. Thus, in contrast to westerly xeric landscapes, the

current population of plovers in prairie landscapes is now restricted to fragments within the Oklahoma panhandle, north through the southwestern corner of Kansas, most of eastern Colorado, the southwestern corner of Nebraska, and eastern Wyoming and Montana (Knopf and Wunder 2006).

First collected by John Kirk Townsend along the Sweetwater River of Wyoming in 1834 and subsequently named the Rocky Mountain Plover by John James Audubon, this species of relatively nondescript plumage received little conservation attention for 150 years. It was never described as historically abundant, and only scattered references to the species appeared in the literature--much like comments are lacking about any non-charismatic species on the western frontier of America in the 1800s. Despite occasional collections of a few birds or clutches of eggs, one specific comment about plover occurring in high densities was that of an early bison hunter from the early 1870s who had killed about 200 in an hour near Dodge City, Kansas (Sandoz 1954). Those likely were from flocks of migrating birds that then flew directly south to winter in South Texas. Today, we believe that most migrants move more to the south along the Front Range of Colorado then swing west across southern New Mexico and Arizona to California and then north into the Central Valley of California. Historical records of migrating plovers are almost non-existent within the Great Basin (Knopf and Wunder 2006).

Forty years ago, Graul and Webster (1976) estimated a continental population of 214,200–319,220 breeding Mountain Plovers, with 20,820 in the “stronghold” of Weld Co., CO. Conservation concern for the species was first expressed when the U.S. Fish and Wildlife Service (FWS) raised questions about population declines from historic levels (Leachman and Osmundson 1990). Unpublished guesses as to the contemporary population of plovers at that time oscillated around 6,000-10,000 birds, much reduced from the historical estimation of Graul and Webster. This difference reflected a severe decline in the population of Weld County, Colorado, used to extrapolate the earlier continental projection. In 1999 the FWS officially proposed listing the species as “Threatened”, with evidence of decreasing population size being statistically supported by >3% annual decline across 30 years of Breeding Bird Survey data (USFWS 1999).

Beginning in the late 1990s, many studies inventoried plover populations in major breeding areas across the species range. Wunder and others (2003) estimated a population of 2,300 birds in the previously undescribed high-elevation population of South Park, Colorado. Summarizing recent inventories across eastern Colorado, FWS concluded that there were an additional 7,000 birds in eastern Colorado. Personal communications from researchers and FWS personnel projected an additional 2,000-5,000 plovers in Wyoming and 1,500 in Montana. Thus, plover breeding populations in these three critical states totaled ~12,800-15,800 birds, with additional small populations known to occur in Kansas, Nebraska, New Mexico, Oklahoma, and Utah. Since all populations seemed to be stable, FWS subsequently decided to withdraw the proposed listing of the plover as a threatened species under The Endangered Species Act (ESA) in September of 2003 (USFWS 2003).

Additional studies following the decision to withdraw the plover listing proposal confirmed, and slightly expanded, the continental population estimate. Plumb and others (2005) conducted a statewide survey within historical plover locales in Wyoming to estimate a minimum of 3,300 breeding birds. This number was within the range of estimates used in the FWS decision. However, the authors emphasized the “minimum” nature of the estimate and it still may be well short of a true statewide population due to the inadequate representation of private lands in both the historical database and contemporary sampling protocol.

Tipton and others (2009) conducted a systematic statewide survey of eastern Colorado. That study defined the Colorado population on the eastern plains to be 8,577 birds, slightly larger than the previous FWS projection of 7,000. Childers and Dinsmore (2008) subsequently estimated 1,028 birds in Northeastern Montana, supportive of the earlier FWS figure of 1500 state-wide. The Wyoming and Colorado studies together, lead to a revised continental estimate of breeding plovers totaling a minimum of 15,700 birds. The true continental population is certainly larger by an unknown quantity given (1) documented small populations in contiguous states (Ellison-Manning and White 2001, Bly et al., 2008, McConnell et al., 2009), (2) a potentially significant population in New Mexico and (3) an unknown population in Mexico (Knopf and Wunder 2006).

On 16 November 2006, Forest Guardians and the Biological Conservation Alliance challenged

the withdrawal of the proposal to list the plover as Threatened (*Forest Guardians, et al. v Ken Salazar et al.*, Case No. 3:06-cv-02560-MMA-BLM). The plaintiffs and the Federal defendants filed a settlement agreement on August 8, 2009, agreeing to reconsider the FWS 9 September 2003, decision to withdraw the proposed listing of the mountain plover (68 Federal Register 53083) and to submit to the Federal Register a notice re-opening the proposal to list the Mountain Plover and providing for public comment by July 31, 2010. Thus, the decision to withdraw the proposed listing of the species in 2003 was ‘vacated’, and the plover is once again proposed as a threatened species under the ESA. The agreement calls for a final listing decision by 1 May 2011.

The listing process for the Mountain Plover was rather unique for the FWS. Whereas most species come to be listed following an initial petition to FWS followed by an FWS review, the impetus for increased conservation concern for this plover came from research within government research. The initial identification of plover declines came from basic science (to 1999) within (vs. external to) the Department of Interior. FWS biologists within Ecological Services pursued the review and ultimately proposed the species for listing. The process is a rather unique example of how government science and operations were intended to work within the Department of Interior. Also, whereas the scientific record for most species listed under ESA is often limited by a lack of historical and contemporary data, the science available to the proposal decision for Mountain Plover in 2003 was some of the best available to date for any species.

If FWS decides to list this plover as threatened, any plan to promote its recovery will be politically challenging. The plover is neither a montane species (as named) nor a species of shores and wetlands like other members of the Charadriidae. Rather, again, it is an upland associate of xeric landscapes to the west of the Colorado Front Range that also occurs where disturbances alter prairie landscapes to the east of the Front Range. Prairie-dogs created both historical and contemporary habitats for plovers (Dreitz et al., 2005). Contemporary sites that also attract breeding plovers in prairie landscapes include surfaces impacted by activities such as

military maneuvers, pipeline construction, petroleum development, and agricultural conversion of prairies. The most attractive of these sites are those agricultural fields that have either been recently tilled or are crop-idle at the time plovers arrive on the breeding grounds. Plovers nest on those fields, and subsequent tillage has been suspected to destroy nests and eggs. Recent research, however, shows that nest/egg destruction by tillage practices appears to be a compensatory rather than an additive constraint on reproduction; the proportion of nests lost to tillage on relatively predator-free croplands is comparable to that proportion lost to predators in contiguous, native landscapes (Dreitz and Knopf 2007).

In winter months plovers were historically found in the coastal uplands and interior valleys of California. Those habitats have been almost universally converted to urban/suburban and agricultural landscapes, respectively. Whereas the preferred habitats on those xeric plains near the ocean and the intensely grazed sites of the San Joaquin and Sacramento valleys only occur in isolated patches on the modern landscape, plovers are now found in large numbers mostly on agricultural fields (Knopf and Rupert 1995). Favored fields include those that have been recently tilled, or recently harvested and followed by either burning or grazing by domestic sheep to clean the field before replanting (Wunder and Knopf 2003).

Critics of listing the plover (including agricultural and rural development organizations among others) note that the behavioral flexibility documented for the species argues strongly against Mountain Plovers being limited by habitat. The high rate of nesting success documented range-wide (Knopf and Wunder 2006, Dinsmore et al. 2002) and high survival rate of breeding (Dinsmore et al. 2003) and wintering (Knopf and Rupert 1995) birds further argue that the contemporary population (albeit historically depressed) is viable. Alternatively, proponents argue that the current plover population (1) is drastically reduced from the Gaul and Webster 1976 projection, (2) has experienced widespread loss of native habitats, and (3) is dependent upon another species of conservation concern (prairie-dogs).

Regardless of the direction of the decision, the forthcoming process will certainly stimulate much political dialogue. If listed, however, FWS will have to develop a plan for working with agricultural producers to manage cropping practices, which goes well beyond contemporary ESA vs. private-lands conflicts. The timing of agricultural practices is weather-driven, and

interjecting ESA considerations into daily management decisions at the level of local farms would have a major economic impact on the agricultural community. Ironically, that political and administrative theater will focus on a semi-desert species that historically and currently occurs secondarily in altered shortgrass prairie landscapes.

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